

Patent Claims What is claimed is:

Sub B2

1. Arrangement for predicting an abnormality of a dynamic system and for implementing an action opposing the abnormality,
whereby a measured data pick-up is provided that registers comparison measured data of the system and test measured data of the system,
comprising a processor unit that is configured such that the following steps can be implemented:
a) a neural network that describes the system is trained upon employment of the comparison measured data;

10 (2) a comparison information flow that describes a comparison dynamic of the system is determined upon employment of the trained neural network;

15 (3) a test information flow that describes a test dynamic of the system is determined upon employment of the test measured data;

20 (4) upon employment of the comparison information flow and of the test information flow, the abnormality is predicted as established when the comparison information flow differs significantly from the test information flow and the abnormality is predicted as not established when the comparison information flow does not significantly differ from the test information flow;

25 (5) when the abnormality of the system has been predicted as established, then the action is implemented;

c) whereby an actuator that implements the action is provided.

Sub B3

2. Arrangement according to claim 1, whereby the steps (2) and (5) of the processor unit form an endless loop.

3. Arrangement according to claim 1 or 2, whereby the abnormality is predicted as established when test information flow is significantly smaller than the comparison information flow.

AT5 Amended

AT6 Amended

A 1
Amended
4. Arrangement according to claim 3, whereby the action is comprised in exciting the system with a chaotic signal.

A 2
Amended
5. Arrangement according to claim 4, whereby the action is comprised in supplying noise to the system.

A 3
Amended
6. Arrangement according to claim 5, whereby the noise is supplied on the basis of a corresponding electrical field.

A 4
Amended
7. Arrangement according to claim 6, whereby the electrical field is supplied on the basis of at least one electrode.

A 5
Amended
8. Arrangement according to claim 5, whereby the noise is supplied on the basis of a corresponding magnetic field.

A 6
Amended
9. Arrangement according to claim 8, whereby the magnetic field is supplied on the basis of at least one electrode.

A 7
Amended
10. Arrangement according to claim 1 or 2, whereby the abnormality is predicted as established when test information flow is significantly greater than the comparison information flow.

A 8
Amended
11. Arrangement according to claim 10, whereby the action is comprised in exciting the system with a regular signal.

A 9
Amended
12. Arrangement according to claim 11, whereby the regular signal is supplied on the basis of an electrical field.

A 10
Amended
13. Arrangement according to claim 11, whereby the electrical field is supplied on the basis of at least one electrode.

A 11
Amended
14. Arrangement according to claim 11, whereby the regular signal is supplied on the basis of a magnetic field.

A 12
Amended
15. Arrangement according to claim 14, whereby the magnetic field is supplied to the system on the basis of at least one electrode.

A 13
Amended
16. Method for predicting an abnormality of a dynamic system and for implementing an action opposing the abnormality, whereby

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Amended

*cont.
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Amended*

5 a) comparison measured data of the system and test measured data of the system are measured,

5 b) a neural network that describes the system is determined upon employment of the comparison measured data;

5 c) a comparison information flow that describes a comparison dynamic of the system is determined upon employment of the neural network;

10 d) a test information flow that describes a test dynamic of the system is determined upon employment of the test measured data;

10 e) upon employment of the comparison information flow and of the test information flow, the abnormality is predicted as established when the comparison information flow differs significantly from the test information flow and the abnormality is predicted as not established when the comparison information flow does not significantly differ from the test information flow;

15 f) when the abnormality of the system has been predicted as established, then the action is implemented.

17 Method for predicting an abnormality of a dynamic system, whereby

20 a) comparison measured data of the system and test measured data of the system are measured,

20 b) a comparison information flow that describes a comparison dynamic of the system is determined upon employment of the comparison measured data;

20 d) a test information flow that describes a test dynamic of the system is determined upon employment of the test measured data;

25 e) upon employment of the comparison information flow and of the test information flow, the abnormality is predicted as established when the comparison information flow differs significantly from the test information flow and the abnormality is predicted as not established when the comparison information flow does not significantly differ from the test information flow.

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